Sleeper

INSTRUCTION BOOK

FOR THE INSTALLATION,
OPERATION AND CARE OF

Sleeper

REG. U.S. PAT. OFF.

RADIO RECEIVING SETS

By every standard of comparison

"There Are No Better Radio Sets"

Price 25 Cents

Sleeper Radio & Mfg. Corporation

438 WASHINGTON AVENUE
LONG ISLAND CITY, NEW YORK

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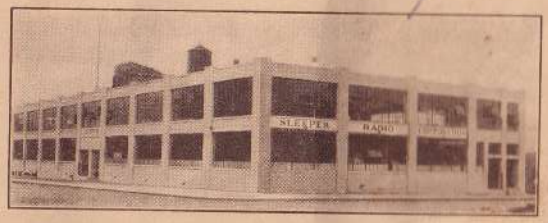
21 Dec. 1927



Fifth Edition

November, 1926

Address all inquiries regarding your set giving Type and Serial Number to the Service Department, Sleeper Radio & Mfg. Corporation, Long Island City, N. Y.

Printed in U. S. A.

INTRODUCTION

You have taken into your home either the Serenader or the Scout model of the new series of Sleeper sets. Alike except for the loud speaker, they are highly developed, highly sensitive, long range receivers.

Back of them is an organization old in radio, proud of a good name, sincerely interested in having you enjoy to the fullest the fine performance the sets are designed to give.

Do your part by studying what is necessary in the way of proper accessories and ordinary upkeep. Have our authorized dealer who sells you the set give you careful instruction in its operation. Look to him for minor repairs or adjustments but remember that back of him is the integrity and interest of our entire organization.

Enroll your set under our six months Service Guarantee by sending to us at once the Guarantee card accompanying this instruction book.

If you ever have any trouble that our dealer cannot adjust write to us giving the type number and serial number of your set, telling us also from whom it was purchased.

If you make any especially good records with your set, do let us know about them.

SLEEPER RADIO & MFG. CORPORATION

GORDON C. SLEEPER, *President.*

ESSENTIALS OF PERMANENT ENJOYMENT OF THE SLEEPER SCOUT OR SERENADER

Please read carefully and keep for reference whenever needed

FIRST—*GOOD TUBES.* Get the very best. Tubes are temperamental—some light but are worthless—some last years; some only a day. Clear tone, big volume and all good distance work require good tubes. Use the types we recommend.

SECOND—*GOOD BATTERIES.* You must have good A, B and C batteries—they must be recharged or replaced whenever they run down. Use the correct voltages for the types of tubes recommended. Get your own charger for your storage battery. There are also good B battery eliminators that run off the lighting current.

THIRD—*GOOD AERIAL AND GOOD GROUND.* Any sort of installation will do for local reception but to get good volume on distant stations use real care in erecting a good aerial well insulated and get a good clean ground connection.

FOURTH—For the Scout—A good loud speaker—Don't get some cheap little horn or cone and expect glorious tone and fine volume. Get the best your purse affords.

FINALLY—Don't assume the fault is with your set every time you get funny noises or faint signals. Look to your accessories, test your batteries, test your tubes, go over all connections carefully, look at your aerial, examine your loud speaker. Consider the weather and ask your neighbor how he is faring. THERE MAY BE AN S.O.S. ON THE AIR.

ACCESSORIES REQUIRED FOR NEW SERIES SCOUT (Type 60) and SERENADER (Type 61)

TUBES: For Detector, one UX-200 or UX-300. For Power Amplifier, one UX-171 (preferred) or UX-112 or equivalent CX-371 or CX-312. And three UX-201-A's or CX-301-A's.

NOTE: Five UX-201-A's or CX-301-A's will also give good reception although the detector tube recommended above is more sensitive and better for distance work. The power tube recommended permits greater volume without distortion.

"A" BATTERY: One 80 to 120 ampere hour Storage "A" Battery provided trickle-charger is not used. With the use of trickle-charger, a 40 to 60 ampere hour "A" Battery may be efficiently used.

"B" BATTERY: Three 45-volt "B" batteries of good standard make, such as No. 772 Eveready or equivalent Burgess, Ray-o-Vac, etc. Only two are needed if power tube is not used.

"C" BATTERIES: 2—22½ volt No. 768 Eveready or equivalent if UX-171 Tube is used. Otherwise use 2—4½ volt Eveready No. 771 or equivalent.

LOUD SPEAKER: For Scout model, a good standard make of cone such as Western Electric, Amplion, Farrand, etc., is recommended.

CHARGER: Either an ordinary "A" Battery charger or special combination trickle and full rate, such as General Electric, is recommended, to insure proper charge of battery.

AERIAL AND GROUND: 100 feet of 7-strand No. 20 copper, silicon bronze or other good grade antenna wire; 50 feet of No. 14 rubber covered, stranded lead-in and ground wire. One ground clamp. Porcelain or pyrex glass insulators.

USEFUL ADDITIONAL ACCESSORIES: Voltmeter, pocket size 0-50; Hydrometer, Acid Battery Type.

USE OF "B" BATTERY ELIMINATORS

A number of good devices operating from the lighting current are now available to eliminate use of B batteries. Your set is especially wired for their use.

First: Read any special instructions furnished with the eliminator, some for instance, require that no ground wire be used with the radio set.

Second: Open the left hand battery compartment door of your set and tape the end of the green and blue wires inside so they cannot short circuit each other.

In the right hand compartment are four wires, two of which, the red and green are used only with eliminators. Remove the tape from the ends of these wires. Now unless the eliminator is of a size that fits into the compartment, run all the wires through the hole in the bottom and carry to the rear. Connect the green wire to the minus of the eliminator; blue to the plus 45 post, yellow to the plus 90 volts, red to plus 135 to 180 volts.

CAUTION: Always in using any Eliminator remove the wire jumper that is between +B and —B on terminal strip at rear of set. Use the proper C battery voltage called for by the full voltage delivered by the eliminator or you may get a bad hum and generally erratic performance.

POWER TUBES

Radiotron UX-171 and Cunningham CX-371 are power tubes of identical characteristics and are designed to give a larger volume of undistorted power.

These tubes practically eliminate distortion due to overloading the last audio tube. However, it must be noted that these tubes are not designed to increase sensitivity to distant stations, but to allow clear undistorted output. It will be found that when using either of these tubes, the sensitivity will be slightly less than when using UX-112 or CX-112, but the very low tones which often blast on lower power tubes are reproduced clearly and distinctly.

More C battery must be used when using these power tubes. Instructions for the amount of C battery will be found on the manufacturers tube carton. Your Sleeper set is so designed as to allow almost any C battery voltage necessary as will appear by sketch elsewhere in this booklet.

Radiotron UX-112 or Cunningham CX-312 may be used where less volume is required. These tubes give greater amplification to weak signals and are recommended where distant reception is desired.

Any power tube, however, requires the correct C battery voltage for the B battery current used or it does not give expected results.

CONNECTING BATTERIES

See pictures on following pages. Except when using a B battery eliminator, disregard the extra red and green wires in the right hand compartment. Keep their ends taped to prevent short circuit.

If you use five 201-A tubes, you need only 90 volts of B battery and 4½ volts of C battery although an extra 45 volt B battery connected to the B battery clips at rear of set after removing jumper will give somewhat better volume.

If you use the UX-112 power tube, you should use three B batteries connected as above and 9 volts of C battery.

If you use the UX-171 power tube, or equivalent, you can use 90 volts of B battery with 16½ volts of C battery, or better, 135 volts of B battery with 27 volts of C battery or 180 volts of B battery with 39 volts of C battery.

NOTE: When you use only 90 volts of B battery, put the Jumper across the B battery clips at the rear, as these are connections used only to put special voltage on the second audio on power tube.

CONNECTING SCOUT LOUD SPEAKER

Use the clips at rear marked "Spk+" and "Spk—." Try reversing after set is operating to find which is better.

ADJUSTING SERENADER LOUD SPEAKER

The Serenader model comes equipped with the Amplion Adjustable Loud Speaker. It is set correctly at the factory. Should it ever blast or rattle, however, the adjusting knob may be turned until it is just back of the point where the diaphram stops functioning.

UX-200-A OR CX-300-A DETECTOR

Your set has been designed to work with either this new tube or the standard UX-201-A or CX-301-A. You will note two small jacks at the right of the last tube on your left.

One marked + (Plus) the other — (Minus). When using the standard tube the tip must be in the jack marked + and when using a UX-200-A or CX-300-A it should be in the jack marked —.

This new detector tube is much more efficient than the standard 201-A tube although somewhat more noisy.

With the standard tube, a station which is barely audible to headphones will be comfortable loud speaker volume when replaced by the new tube.

PUTTING UP THE AERIAL

The following several pages picture different building conditions and best methods of installing aerials for each given condition. It is possible that none of these examples fit your particular local condition. If this is the case, simply be guided by these general rules for good aerial installations:

(1) Aerial should be as high as conveniently possible.

(2) Joints, when necessary, should be soldered and taped. Use only one piece of wire if possible.

(3) Avoid sharp turns or bends.

(4) If at all possible, do not permit any section of the antenna or lead-in to run closer than three feet from metallic or grounded objects, such as copper gutters, roofs, fire escapes, telephone wires, etc. Avoid growing trees and shrubs.

(5) Under no circumstances should the antenna cross either above or below wires charged or that may become charged with electricity—Play safe—AVOID CROSSING ANY WIRES.

(6) Use porcelain (glazed), pyrex glass, or other high-grade insulators.

(7) Where bare wire of antenna joins the insulated lead-in, be sure that the joint is well taped and, if possible, shellacked to exclude moisture from the joint.

(8) Antenna and ground wire connections to your set should be scraped clean and bright. The same applies to the ground wire connection where it makes contact with "ground" if, for any reason, you find it impractical to solder this latter connection. The antenna wire should be seven strands, twisted, of No. 20 silicon-bronze, the lead-in wire should be rubber insulated and not smaller than No. 14, preferably stranded. Better and more consistent operation will be had if your aerial is located as far as possible from your neighbor's, thus avoiding interference.

GROUND CONNECTION

Your ground connection of No. 14 insulated wire should be as short as possible and securely fastened to a cold water pipe by means of a clamp or soldering. Other pipes, such as hot water, steam, gas, etc., may do, but frequently do not provide a good ground. An iron rod driven into the ground about five feet usually will give fair results. Avoid joints in the ground wire, but, where necessary, they should be soldered.

CONNECTING AERIAL AND GROUND WIRES

After the set has been conveniently placed in your home, the first step toward operation is connecting the antenna lead-in to the proper clip on the back of the set. Figure No. 8 shows the back of the set with the various binding posts to which the antenna and ground wires are to be connected. If your antenna is 75 feet or longer connect the lead-in to the binding post labeled Long Antenna, while if you are using an indoor antenna or one shorter than 75 feet in length, connect the lead-in to the binding post labeled Short Antenna.

The use of the long and short antenna binding post will be governed largely by local conditions and there is no fixed rule to

go by. Both antenna connections are provided so that the maximum selectivity may be obtained under local conditions.

The ground wire should next be connected to the clip marked GND.

INSERTING TUBES—FINAL STEP

After all battery connections have been made and checked, insert one tube in any one of the tube sockets and turn the battery switch to "on" position. Now turn the rheostat knob to the right. If the tube does not light up, again check all battery connections, as it is possible that you have attached an "A" battery connection to a "B" battery binding post, thus allowing considerably more than 5 volts to be applied to the tube filament, and have burned out the tube. If the battery connections are absolutely correct, try another tube in the socket, as tubes are sometimes found to be imperfect after purchase.

By inserting one tube and testing, as outlined above, you will be safeguarded against the possibility of burning out all your tubes in case you have made a mistake in your wiring connections.

If the first tube you insert lights properly, you can now insert the rest of the tubes in the remaining sockets.

If you have followed instructions carefully, you now have your RECEIVING SET properly connected to the ANTENNA and GROUND, the LOUD SPEAKER (if required), the "A," "B" and "C" BATTERIES. Your TUBES are all in their sockets and BURNING PROPERLY, because the BATTERY SWITCH is turned on and the RHEOSTAT is turned about THREE-QUARTERS to the RIGHT.

You are now ready to TUNE your RECEIVING SET to RECEIVE BROADCASTING.

OPERATION

Best results in operating your set will come with experience. First try for local stations. Turn the "Rheostat" way on.

Now using both hands on the large knobs, run the pointers slowly together up and down the scales until you hear a station. Then adjust each pointer separately for best results. Next reduce your "Rheostat" and tune still closer until you have a nice balance between the least current or power consumption and the desired volume. Now last of all, adjust your vernier knob at the

left. Ordinarily the vernier is used only for very close tuning on distant stations.

When you have the feel of the controls and understand what each is used for, see what sort of a log you can make. Start at zero. Move the left pointer one division at a time and keep the right moving back and forth over four to five divisions. Write down each station as you get its signature.

Regarding distance work—it is almost impossible for any set to cut through the high power barrage of local stations in our big cities until they go off the air.

Reception over 50 miles is very difficult in the daytime. Summer months are very poor for distance. Distant stations are never as well received as local stations for a set powerful enough to receive the tiny impulses from distant stations also picks up any electrical disturbance in the same area. Hence atmospheric noises and other interference are often as strong as the broadcasting signals from far away.

The lower side of the tuning scales is usually a riot of little low power stations, many on about the same wave length. It is good fun fishing for them but don't expect much good reception on this end of the scale.

If you are ever annoyed by squeals and sobbing sounds in your speaker don't blame you set but scold your neighbor who has an old regenerator set that should be thrown away.

Regarding selectivity—you should be able to separate cleanly without overlapping any stations of equal strength that are 5 to 10 meters different in wave length—if you cannot after due experience in tuning either your "Rheostat" is too far advanced or your aerial is too long.

Regarding volume—volume depends on many factors. The strength of the signal itself, the length of your antenna, the longer the better for volume and just the reverse for selectivity—the efficiency and kind of your tubes, the B battery voltage used and also the condition of your A battery. Other factors being right, for more volume, lengthen your antenna preferably in a straight line and raise it higher from the ground meaning not simply the earth but any surface that may act as a ground like trees, roofs or chimneys.

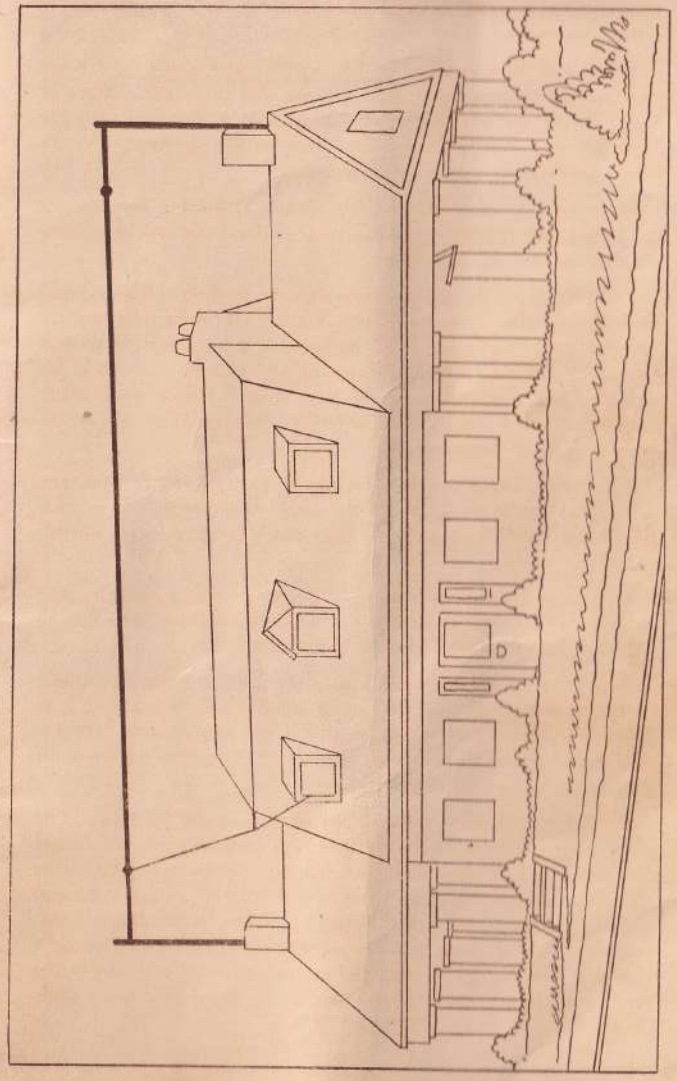


Fig. 1—OUTSIDE ANTENNA

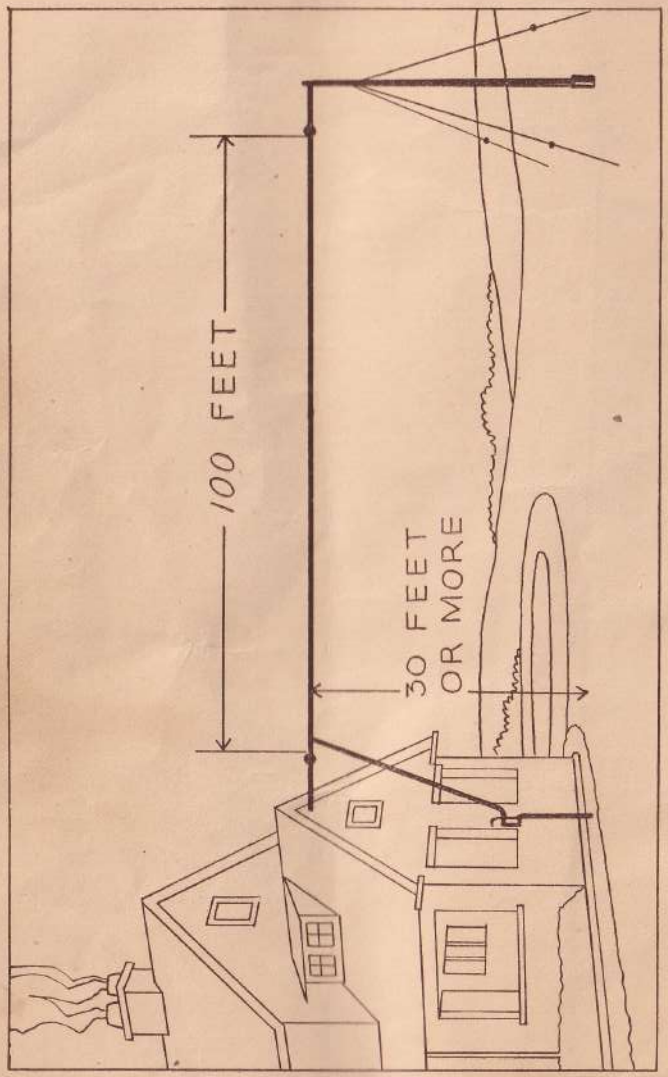


Fig. 2—OUTSIDE ANTENNA

NOTE: It is obviously impossible to print in this small folder a complete list of broadcasting stations. To the best of our knowledge the following list was correct on November 1, 1926. Sleeper Radio & Mfg. Corporation.

Wave Length	Call Letters	Location	Date	Dial Settings
545	KFUO	St. Louis, Mo.	.....	.....
545	KSD	St. Louis, Mo.	.....	.....
545	WTAG	Worcester, Mass.	.....	.....
535	KYW	Chicago, Ill.	.....	.....
535	WHA	Madison, Wis.	.....	.....
526	WHO	Des Moines, Iowa	.....	.....
526	WNYC	New York City	.....	.....
526	WOAW	Omaha, Nebr.	.....	.....
517	WJR	Detroit, Mich.	.....	.....
517	WCX	Detroit, Mich.	.....	.....
517	CJCA	Edmonton, Alta.	.....	.....
517	CNRE	Edmonton, Alta.	.....	.....
510	CYL	Mexico City	.....	.....
508	KLX	Oakland, Cal.	.....	.....
508	WIP	Philadelphia, Pa.	.....	.....
508	WOO	Philadelphia, Pa.	.....	.....
500	WMC	Memphis, Tenn.	.....	.....
492	KGW	Portland, Ore.	.....	.....
492	WEAF	New York City	.....	.....
485	WJAR	Providence, R. I.	.....	.....
484	WOC	Davenport, Iowa	.....	.....
484	WJJD	Mooseheart, Ill.	.....	.....
484	WSUI	Iowa City, Iowa	.....	.....
476	WTIC	Hartford, Conn.	.....	.....
476	WFAA	Dallas, Texas	.....	.....
476	WPAB	Forth Worth, Texas	.....	.....
469	KFI	Los Angeles, Calif.	.....	.....
469	WCAP	Washington, D. C.	.....	.....
469	WRC	Washington, D. C.	.....	.....
461	WCAE	Pittsburgh, Pa.	.....	.....
461	KFNF	Shenandoah, Iowa	.....	.....
461	KMA	Shenandoah, Iowa	.....	.....
454	KFOA	Seattle, Wash.	.....	.....
454	KTW	Seattle, Wash.	.....	.....
454	WJZ	New York City	.....	.....
448	WMAQ	Chicago, Ill.	.....	.....
448	WQJ	Chicago, Ill.	.....	.....
441	WMAF	Dartmouth, Mass.	.....	.....
441	WOS	Jefferson City, Mo.	.....	.....
434	CFAC	Calgary, Alta.	.....	.....
434	CFCN	Calgary, Alta.	.....	.....
434	CNRO	Ottawa, Ont.	.....	.....
430	WNAC	Boston, Mass.	.....	.....

Wave Length	Call Letters	Location	Date	Dial Settings
428	KPO	San Francisco, Calif.		
428	WSB	Atlanta, Ga.		
422	WLW	Cincinnati, Ohio		
416	WCCO	Minneapolis, Minn.		
411	CFCF	Montreal, Que.		
411	CHYC	Montreal, Que.		
411	CKAC	Montreal, Que.		
411	CKCD	Vancouver, B. C.		
411	CNRM	Montreal, Que.		
405	KHJ	Los Angeles, Calif.		
405	WJY	New York City		
405	WOR	Newark, N. J.		
400	WHAS	Louisville, Ky.		
400	PWX	Havana, Cuba		
395	WFI	Philadelphia, Pa.		
395	WLIT	Philadelphia, Pa.		
395	WOAI	San Antonio, Texas		
394	KFRU	Bristow, Okla.		
389	WEAR	Cleveland, Ohio		
389	WTAM	Cleveland, Ohio		
384	KJR	Seattle, Wash.		
384	WMBF	Miami Beach, Fla.		
384	CKY	Winnipeg, Man.		
384	CNRW	Winnipeg, Man.		
380	WGY	Schenectady, N. Y.		
380	WHAZ	Troy, N. Y.		
375	KTHS	Hot Springs, Ark.		
375	WRNY	New York City		
370	WEBH	Chicago, Ill.		
366	WDAF	Kansas City, Mo.		
366	WHB	Kansas City, Mo.		
361	KGO	Oakland, Calif.		
361	WHN	New York City		
357	CFCA	Toronto, Ont.		
357	CHIC	Toronto, Ont.		
357	CHNC	Toronto, Ont.		
357	CNRT	Toronto, Ont.		
353	WJAD	Waco, Texas		
353	WWJ	Detroit, Mich.		
349	KOB	State College, N. M.		
349	WEEI	Boston, Mass.		
345	WCBD	Zion, Ill.		
345	WLS	Chicago, Ill.		
341	KSAC	Manhattan, Kans.		
341	WKAQ	San Juan, P. R.		
341	WMCA	New York City		

Wave Length	Call Letters	Location	Date	Dial Settings
341	KFAB	Lincoln, Nebr.		
337	KFMX	Northfield, Minn.		
337	KNX	Los Angeles, Calif.		
337	WCAL	Northfield, Minn.		
333	WBZ	Springfield, Mass.		
326	WKRC	Cincinnati, Ohio		
326	WSAI	Cincinnati, Ohio		
322	KOA	Denver, Colo.		
319	WGR	Buffalo, N. Y.		
319	WSMB	New Orleans, La.		
316	KFDM	Beaumont, Texas		
316	KPSN	Pasadena, Calif.		
316	WAHG	Richmond Hill, N. Y.		
316	WGBS	New York City		
312	CKCK	Regina, Sask.		
312	CNRA	Moncton, N. B.		
309	KDKA	East Pittsburgh, Pa.		
306	KOIL	Council Bluffs, Iowa		
306	KTCL	Seattle, Wash.		
303	WGN	Chicago, Ill.		
303	WLIB	Elgin, Ill.		
300	KSL	Salt Lake City, Utah		
300	WPG	Atlantic City, N. J.		
297	KPRC	Houston, Texas		
294	WBAV	Columbus, Ohio		
294	WEAO	Columbus, Ohio		
288	KFKX	Hastings, Nebr.		
288	WLWL	New York City		
283	WOAN	Lawrenceburg, Tenn.		
280	WREO	Lansing, Mich.		
278	KOP	Detroit, Mich.		
278	KWWG	Brownsville, Texas		
278	WCAU	Philadelphia, Pa.		
278	WGBU	Fulford, Fla.		
278	WOQ	Kansas City, Mo.		
275	KQV	Pittsburgh, Pa.		
275	WBAK	Harrisburg, Pa.		
275	WCEE	Elgin, Ill.		
275	WHAD	Milwaukee, Wis.		
275	WHAR	Atlantic City, N. J.		
275	WJAS	Pittsburgh, Pa.		
275	WORD	Batavia, Ill.		
273	KWKH	Kennonwood, La.		
273	WEBJ	New York City		
273	WFBH	New York City		
270	KGU	Honolulu, T. H.		

Wave Length	Call Letters	Location	Date	Dial Settings
270	WGHP	Detroit, Mich.		
270	WOI	Ames, Iowa		
268	WNOX	Knoxville, Tenn.		
266	WBCN	Chicago, Ill.		
266	WCAH	Columbus, Ohio		
266	WENR	Chicago, Ill.		
266	WMAK	Lockport, N. Y.		
266	WWI	Dearborn, Mich.		
263	WAAM	Newark, N. J.		
261	WPSC	State College, Pa.		
256	WRVA	Richmond, Va.		
252	KFWB	Hollywood, Calif.		
252	KMA	Shenandoah, Iowa		
252	WGCP	Newark, N. J.		
250	KDPM	Cleveland, Ohio		
250	KFXF	Colorado Springs, Col.		
250	WGES	Oak Park, Ill.		
250	WMBB	Chicago, Ill.		
246	KFVW	San Diego, Cal.		
244	WAMD	Minneapolis, Minn.		
240	KFVE	St. Louis, Mo.		
238	WHT	Deerfield, Ill.		
226	WBBM	Chicago, Ill.		
226	WIBO	Chicago, Ill.		
217	WOK	Homewood, Ill.		
350 10	BO	St John N.B	5 Jany/38	
505, 590	WEEI	Boston	Jan 25	

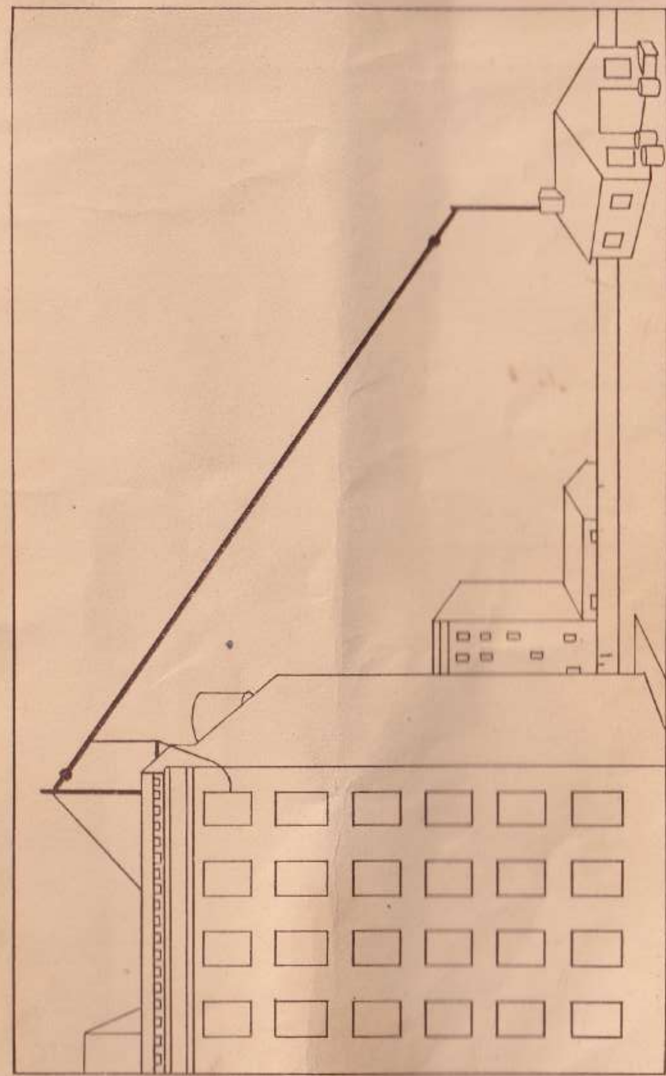


Fig. 3—OUTSIDE ANTENNA

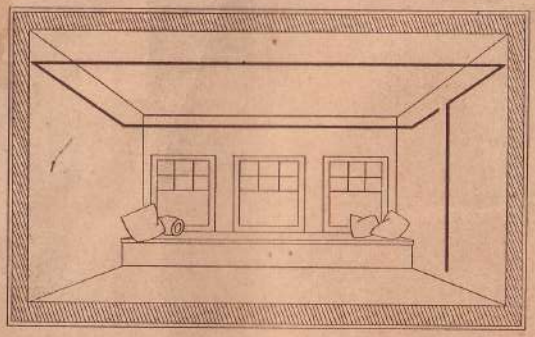


Fig. 4
INSIDE ANTENNA

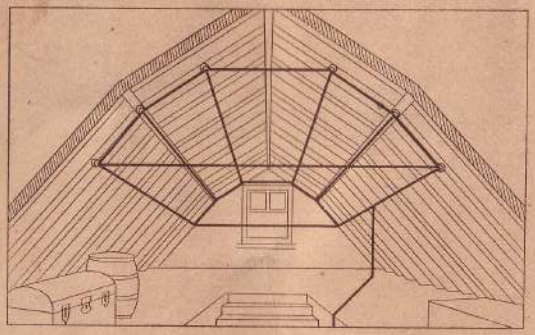


Fig. 5
INSIDE ANTENNA

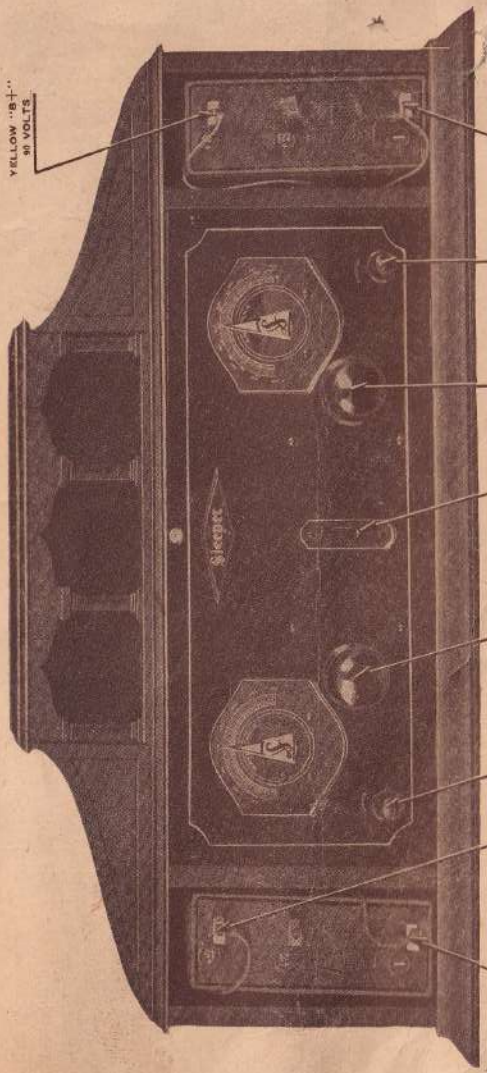

YELLOW "B+" 90 VOLTS
BLUE "B-"
VOLUME CONTROL
TUNE IN WITH THIS KNOB AFTER SET TING WAVE LENGTH
BATTERY SWITCH
SET THIS FIRST TO DESIRED WAVE LENGTH
FOR FINE TUNING ON DISTANCE
BLUE "B+" 45 VOLTS
GREEN "B-"

Figure 6—Showing use of controls and B Battery connections for 90 volts.

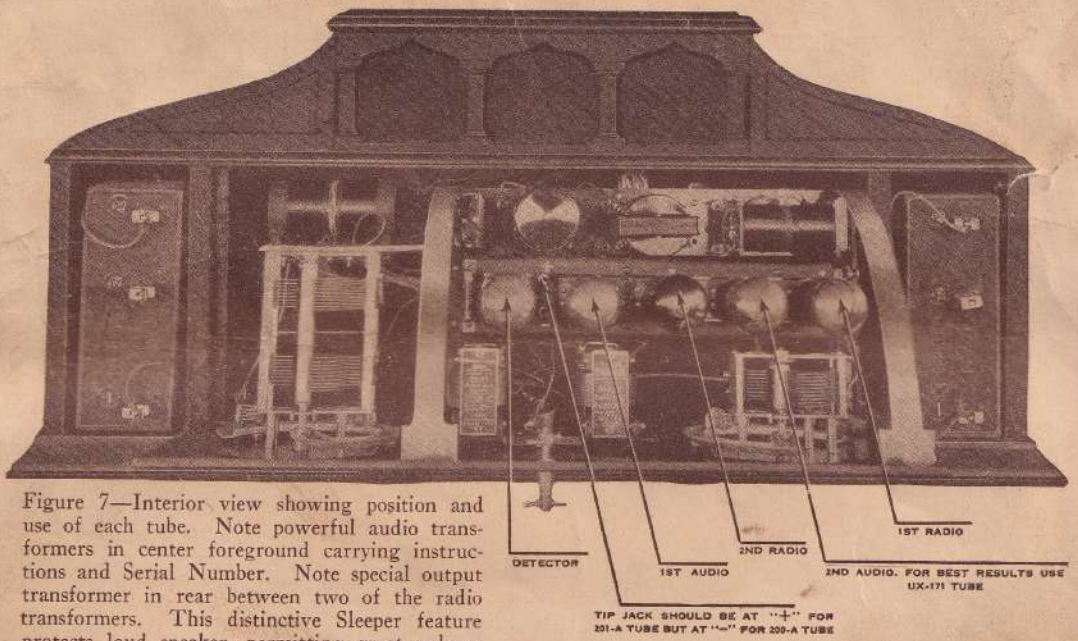

DETECTOR
1ST AUDIO
2ND RADIO
1ST RADIO
2ND AUDIO. FOR BEST RESULTS USE UX-171 TUBE
TIP JACK SHOULD BE AT "+" FOR 201-A TUBE BUT AT "−" FOR 200-A TUBE

Figure 7—Interior view showing position and use of each tube. Note powerful audio transformers in center foreground carrying instructions and Serial Number. Note special output transformer in rear between two of the radio transformers. This distinctive Sleeper feature protects loud speaker, permitting great volume without distortion.

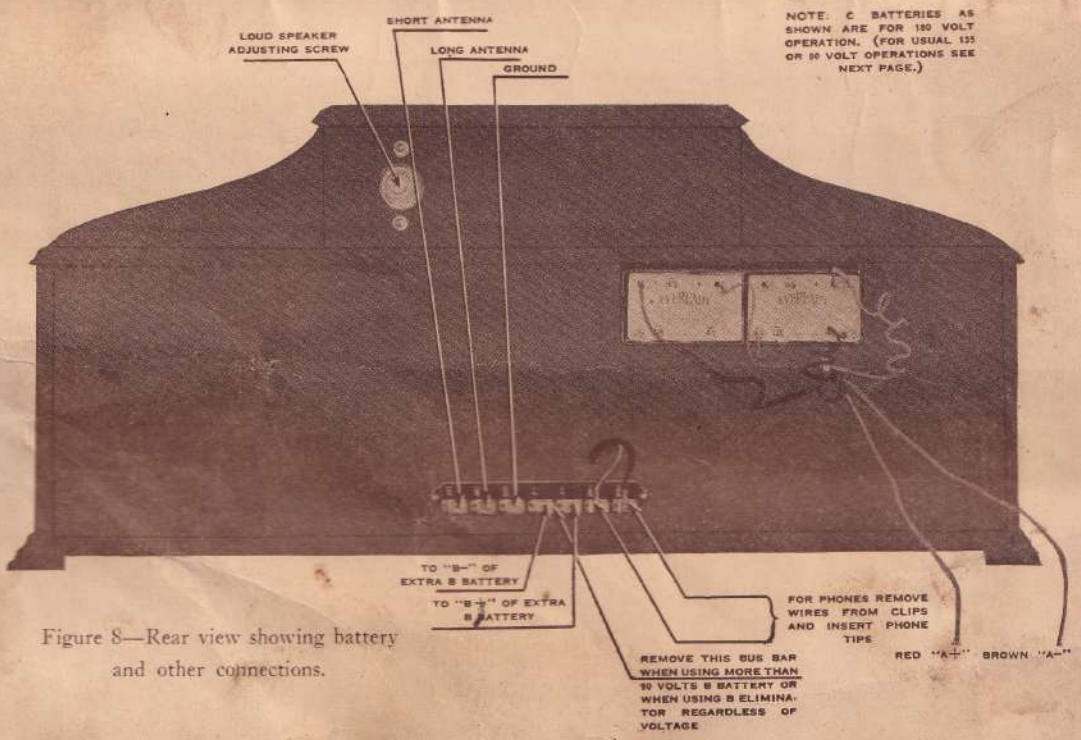
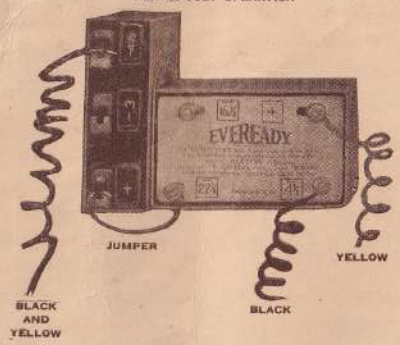

LOUD SPEAKER ADJUSTING SCREW
SHORT ANTENNA
LONG ANTENNA
GROUND
NOTE: C BATTERIES AS SHOWN ARE FOR 180 VOLT OPERATION. (FOR USUAL 135 OR 90 VOLT OPERATIONS SEE NEXT PAGE.)
TO "B−" OF EXTRA B BATTERY
TO "B+" OF EXTRA B BATTERY
FOR PHONES REMOVE WIRES FROM CLIPS AND INSERT PHONE TIPS
RED "A+" BROWN "A−"
REMOVE THIS BUS BAR WHEN USING MORE THAN 90 VOLTS B BATTERY OR WHEN USING B ELIMINATOR REGARDLESS OF VOLTAGE

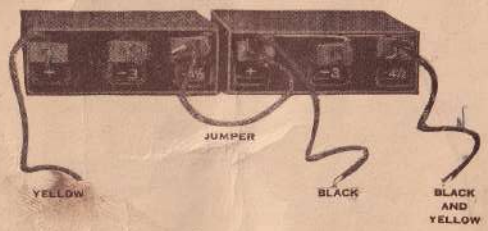
Figure 8—Rear view showing battery and other connections.

FIGURE 9
FOR UX-171
C BATTERY HOOK-UP
FOR 135 VOLT OPERATION



NOTE—FOR UX-171
WITH 90 VOLTS USE ONE 22½ VOLT C BATTERY. CONNECT YELLOW AND BLACK WIRES AS IN PICTURE BUT RUN BLACK AND YELLOW WIRE TO —16½ VOLTS.

FIGURE 10
FOR UX-112
C BATTERY HOOK-UP
FOR 135 VOLT OPERATION



FOR FIVE UX-201-A'S
USE ONE SMALL 4½ VOLT C BATTERY. CONNECT YELLOW TO PLUS AND BOTH BLACK, AND THE BLACK AND YELLOW WIRES TO —4½.

CARE OF YOUR SET AND ACCESSORIES

Read this, friend, and remember: When your set gets fainter and fainter, and you start phoning frantically for service, your batteries are run down. Ninety per cent. of all complaints about perfectly good radio sets are really about batteries.

CHARGING STORAGE BATTERIES: It is both economical and convenient to possess your own battery charging apparatus. This will save you carrying or sending your "A" battery to a service station for re-charging and you need never be without the use of your own "A" battery. A good charger is not expensive, will last for a long time and is economical in its use of current. Full information and directions as to its care and use will accompany the charger. Follow these closely and *always be sure to disconnect both wires running from the battery to the receiving set* from the storage battery before connecting the battery charger wires to the storage battery.

The frequency with which it will be necessary for you to charge your battery will depend on the ampere hour capacity of your particular battery, and the length of time you use your set between charges; to determine this, a frequent check should be kept on charging by use of a hydrometer. The use of a voltmeter is not recommended for checking the "A" battery as it does not give a true indication of the "A" battery's condition, but a battery should be charged at least once a month whether the receiving set has been used or not, so that deterioration in the battery will be prevented.

The length of time your battery should be charged at any one time will depend upon its capacity (in ampere hours) and the rate with which your charger delivers current, but always check by use of a hydrometer unless some other means is included with your battery. Your "A" battery may be used immediately after charging is discontinued.

CARE OF DRY "B" BATTERIES: Run-down "B" batteries are *the most frequent causes of poor reception*. In order to guard against this trouble, we recommend that you purchase a high-grade voltmeter and test the voltage of your "B" batteries at frequent

intervals. A 45-Volt "B" battery is useless when it registers less than 38 volts. As one "dead" battery will stop the flow of current through the rest, it must be removed and replaced with a new one to secure satisfactory results.

TUBES: As all tubes deteriorate in time, it is suggested that twice a year all tubes be taken to your dealer for testing, or borrow an extra tube (one known to be perfect) and try it out in each socket in turn, thus comparing each of old tubes with it.

Just as one carries a spare tire on his automobile, so is it good practice to have an extra good tube convenient. This may save embarrassing moments.

WIRING CONNECTIONS: Due to jarring and vibration, wiring connections are sometimes loosened, and it is recommended that at least once a month all connections on both the receiving set and batteries be gone over and all nuts screwed down tight.

LOCATING AND REMEDYING TROUBLE

DAY AND NIGHT DIFFERENCE: Reception of broadcasting is always better after twilight. It is considered good reception when a standard five-tube set will bring in satisfactory broadcasting from stations 100, or even 50 miles away, in the day time. Under the same conditions the same set usually will bring in with volume and clearness, at night, stations located more than 1,000 miles distant. One of the most frequent causes of poor reception is due to atmospheric conditions. If you suddenly experience trouble in bringing in distant stations, and your tubes are comparatively new and your batteries seem all right when tested, call up one of your neighbors and find out if they, too, are experiencing difficulty. If they are, you can feel sure that your trouble is not due to your radio. However, if your neighbors are not experiencing the difficulty that you are, you had better go over your complete installation in order to locate the cause of the trouble. Some of these possible causes are:

LOOSE OR CORRODED WIRING CONNECTIONS: Try tightening all connections and see that they are bright and clean.

DEFECTIVE OR WORN-OUT TUBES: Replace with new tested tubes.

ANTENNA GROUNDED OR BROKEN DOWN: Examine your antenna and make sure it is not broken down, or that it is not resting on other wires, branches of trees or the like. Follow this examination of your antenna by a study of your lead-in, from where it is attached to the antenna to where it is attached to the receiving set.

WIRES FROM RECEIVING SET TO BATTERIES IMPROPERLY CONNECTED.

"FADING": The "fading" of signals, which means that the voices or music first come in distinctly, then fade away, only to come in strongly after a short period of time, can hardly be classed as poor reception, for, as a rule, this condition will be found to exist with only one or two stations on a given evening, while broadcasting will be heard from other and equally distant stations, without intermission or fading of any kind. Fading is attributed to atmospheric conditions that are more or less localized and therefore do not affect all broadcasting reception on any given night.

SET IS "DEAD": Look at your tubes, one may be out. Replace tube. All tubes may be out. Trace battery connections, there is sure to be a break. If all tubes are lighted, check over your "B" and "C" battery connections for an open circuit. If circuit is complete, check the battery voltages with your voltmeter. A dead battery may be the cause. Failing here (and these are the usual causes of "dead" sets), examine your ground and aerial connections. Make sure your aerial has not come in contact with the ground or trees or the roof and that your "ground" connection is making a good contact. If your set uses a loud speaker examine your loud speaker last. It should give a dull "puck" when disconnected. You will find—in most cases—that one of these suggestions will permit you to find your trouble.

NO VOLUME: This usually can be traced to one of three causes. Look first for low or dead battery, "A" or "B" or "C," next for a poor tube and last (if antenna has been up a full season) to the

condition of your antenna wire. All copper wire is acted upon by the elements. An oxide is formed in joints that prevents the wire picking up a sufficient amount of radio energy from the air. The remedy is to replace the old wire with new.

NOTE: If "C" battery is being used, not only check its voltage but also make sure it is not connected up backwards.

NOISES AND HOW TO STOP THEM

To find out whether the disturbing noise is generated inside of your radio set, tune in a station and disconnect the antenna lead-in and ground wires from the receiving set. If the noise continues, it is no doubt due to something inside of your installation—most likely your batteries. Look to your "A"' battery terminals to be sure they are not corroded, but are bright and clean. Test your "B" batteries and note whether all cells register the required voltage.

CRACKLING OR WHISTLING is usually due to run-down "B" batteries, and can be remedied by replacing the exhausted batteries with new ones.

A CONTINUED SINGING NOISE while the set is connected to the antenna and ground is sometimes due to the fact that the loud speaker is placed too close to the Receiving Set—try moving it further away and facing *from* the set.

AN INTERMITTENT "PEEPING" NOISE: An intermittent "peeping" noise, varying in intensity and sounding like the chirping of a little bird, is usually caused by an amateur sending station.

AN INTERMITTENT BUZZING: A strong, intermittent buzzing is usually caused by a commercial or governmental radio sending station. You have heard it called "code".

A CONSTANT HIGH PITCHED WHISTLE: This is known as a "heterodyne whistle" and is due to the fact that another station is broadcasting on very nearly the same wave length as the station you have tuned in. Very fine tuning will sometimes better the condition, but as a rule, it is best to give up attempting to tune in the station to which you are endeavoring to listen until the other station has signed off.

SCREECHING: These noises vary in intensity and are usually due to some other receiver that is being tuned in, in your neighborhood. Nothing can be done to remedy this trouble—it is a case of "grin and bear it."

A CONSTANT CRACKLING AND CRASHING: Usually due to static generated in the upper atmosphere, which is picked up by your antenna wire and runs through your receiving set to the earth. Static, while a perfectly harmless phenomena, is at times exceedingly annoying. Nothing can be done to remedy the condition, but a change in the weather may entirely dispel it and reception will again be clear.

A CONSTANT HUMMING: Usually due to a dynamo located somewhere in your immediate neighborhood, or even at a distance, in which latter case the hum of the dynamo is transmitted through electric light or power wires, near which you have placed your antenna or lead-in. This is particularly apt to be the case if your antenna parallels electric light or power lines. By changing the location, or altering the direction of your antenna, you may be able to eliminate, or at least reduce this trouble.

A CONTINUED OR INTERMITTENT CRASHING: Often due to a so-called "leak" in a near-by high-powered electric transmission line and most apt to be noticed in wet weather.

OTHER NOISES: There are numerous other conditions that may cause annoying noises, such as Elevators, Trolleys, X-Ray, Moving Picture or Violet Ray machines, located either in the same building or in your immediate neighborhood. Or near you may be an arc-light, flashing electric sign, an electric welder or a similar electrical device. Likewise, any piece of apparatus using an electric motor, such as a vacuum cleaner, air pump, vibrator, etc., is apt to cause annoyance at various times.

A FINAL WORD

In concluding, we would like to impress upon you that almost invariably you will find that poor reception, disturbing noises and other like troubles are not due to any defect in your Sleeper Receiving Set, provided it has not been tampered with since leaving our factory.

Your set was carefully inspected and tested on actual broadcasting. If you experience trouble of any kind in operating your set, first study over your installation, starting with your batteries, then the wiring, tubes, antenna, lead-in and ground, before you decide that the trouble lies in the receiving set. If, after carefully examining and testing the various parts of the installation, as suggested in this book, you are convinced that the receiving set is at fault, do not attempt to locate and remedy the trouble yourself, but take the set or loud speaker to your dealer for examination by his experts.

The interest of the Sleeper Radio & Mfg. Corporation in the performance of your particular set did not cease when the set left their factory. It is our hope that your set will bring you a full measure of pleasure and amusement, and it is with this idea that the foregoing suggestions for the installation, operation and maintenance of your set are offered.

SLEEPER RADIO & MFG. CORPORATION,
438 Washington Ave., Long Island City, N. Y.

Important!

PLEASE READ BEFORE OPERATING

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